

REMARKS

In the Office Action mailed on October 1, 2004 by the United States Patent and Trademark Office, the Examiner rejected claims 1-3, 5, 8, 10, 13, 16-20, 22, 25, 27, and 30 and objected to claims 4, 6, 7, 11, 12, 14, 15, 21, 23, 24, 26, 28, 29, 31, and 32. By way of this Amendment and Response, the claims have been amended by revising claim 1. After entry of this Amendment and Response, claims 1-32 remain in the above-identified patent application. Reconsideration is respectfully requested in light of the foregoing amendments and the following remarks. The foregoing amendments and the following remarks are believed to be fully responsive to the Office Action mailed on October 1, 2004.

I. CLAIM OBJECTION OF CLAIM 1

The Examiner objected to claim 1 because of an informality. More specifically, the Examiner stated that "since 'a reference antenna element' is recited in lines 4-5 of the page 22, 'a reference antenna element' as recited in lines 10-11 should be changed to 'the reference antenna element.'"

In view of the Examiner's objection, claim 1 has been amended to change the second occurrence of "a reference antenna element" to "the reference antenna element" in order to provide proper antecedent basis for the second occurrence of this term. Accordingly, the Examiner is respectfully requested to withdraw the objection to claim 1.

II. CLAIM OBJECTION OF CLAIM 26

The Examiner objected to claims 26 because of an informality. More specifically, the Examiner stated that "[c]laim 26 should depend on claim 23 or 24. Otherwise, the formula for the phase correction factor should include expressions of the formula in the similar way as done in claim 23." Applicant respectfully traverses this rejection.

It is respectfully submitted that the dependency of claim 26 from claim 25 is proper as claim 26 refers back to and further limits claim 25 with claim 26 construed to include all the limitations of the claim 25 in accordance with 37 C.F.R. § 1.75(c). More specifically, claim 26 further limits the phase correction factor (Δ) introduced in claim 26 to a phase correction factor (Δ) that is specified by the equation of $\Delta = (\mathbf{v}^H \mathbf{H} \mathbf{w})^* / |\mathbf{v}^H \mathbf{H} \mathbf{w}|$. As claim 26 further limits claim 25, claim 26 contains all the limitations of claim 25 in accordance

with the C.F.R., and claim 25 appears to be acceptable to the Examiner. Accordingly, Applicant respectfully submits claim 26 is acceptable and respectfully requests the Examiner to withdraw the rejection of claim 26.

III. REJECTIONS UNDER 35 U.S.C. 103(a)

The Examiner rejected claims 1-3, 5, 8, 10, 13, 18-20, 22, 25, 27, 30 under 35 U.S.C. §103(a) as being unpatentable over U.S. patent no. 6,317,586 as issued to Haardt on November 13, 2001 (hereinafter referred to as "Haardt") in combination with U.S. patent no. 6,121,927 as issued to Kalliojarvi on September 19, 2000 (hereinafter referred to as "Kalliojarvi"). In addition, the Examiner rejected claims 16-17 under 35 U.S.C. §103(a) as being unpatentable over Haardt in view of Kalliojarvi and further in view of U.S. patent no. 6,233,466 as issued to Wong et al on May 15, 2001 (hereinafter referred to as "Wong"). Applicant respectfully traverses these rejections.

In proceedings before the U.S. Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art. See In Re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). In addition, a *prima facie* case of obviousness cannot be found unless all the elements of the claim are taught or suggested by the cited art. In Re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). See also In Re Wilson, 424 F. 2d 1382, 165 U.S.P.Q.2d 494 (C.C.P.A. 1970) ("All words in a claim must be considered in judging patentability of the claim against the prior art."). As the Examiner has not found a teaching or suggestion in Haardt or Kalliojarvi for all the elements in independent claims 1 and 18, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case obviousness based upon this single prior art reference.

For example, the Examiner acknowledges that "Haardt fails to disclose a reference channel impulse response configured as a reference antenna element is used for channel impulse response estimation." (See Office Action mailed October 1, 2004 (Paper No. 5), page 3). However, the Examiner states that Kalliojarvi discloses a method for determine a channel impulse response wherein a reference channel impulse response configured as a reference antenna element for better estimating the direction of the multipath. Nevertheless, the Applicant respectfully submits that Kalliojarvi discloses a location estimation system that uses a receive array with a multipath channel estimate that is obtained from any one of the

array elements. (See Kalliojarvi col. 5, lines 46-49, with added emphasis). Furthermore, the Applicant respectfully submits that Kalliojarvi discloses that the channel impulse response is selected as the reference and there is no teaching or suggestion of a channel a reference channel impulse response configured as a reference antenna element that is used for channel impulse response estimation. Moreover, the Applicant respectfully submits that Kalliojarvi appears to provide that the network is completely free to use any reference element. Therefore, Kalliojarvi fails to teach or suggest "one of said plurality of antenna elements configured as the reference antenna element" as recited in independent claims 1 and 18, and therefore all the elements of these claims are taught or suggested by the cited art.

It is respectfully submitted that even assuming *arguendo* that all the elements of these claims are taught or suggested by the cited art¹, the Examiner has also failed to provide some teach, suggestion or incentive supporting the combination of Haardt and Kalliojarvi. Rather, any support of this two reference combination is limited to the Examiner's assertion that the two references are "analogous art." However, obviousness cannot be established by combining teachings of the prior art to produce the claimed invention, absent some teaching or incentive supporting the combination. (See In Re Geiger, 815 F.2d 686, 2 U.S.P.Q.2d 1276, 1278). Moreover, when the incentive to combine the teachings of the references is not readily apparent, it is the duty of the Examiner to explain why combination of the reference teachings is proper and absent such reasons or incentives, the teachings of the references are not combinable. (See Ex parte Skinner, 2 U.S. P.Q.2d, 1788, 1790 (B.P.A.I. 1986)) Furthermore, it is impermissible to use the claimed invention as an instruction manual or template to piece together the teachings of the prior art so that the claims invention is rendered obvious (i.e., one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to duplicate the claimed invention.) (See In Re Fritch, 972 F.2d 1260, 23 U.S.P.Q.2d 1780, 1784 (Fed. Cir. 1992) (quoting In Re Fine, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988)).

In view of the foregoing, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case obviousness because all the elements of the claim are taught or

¹ The Applicant does not concede that Kalliojarvi or any of the references of record teach, disclose or suggest "one of said plurality of antenna elements configured as the reference antenna element" or concede that Kalliojarvi or any of the other references of record teach, disclose or suggest other limitations set forth in the claims.

suggested by the cited art, there is no teaching, suggestion or incentive supporting the combination or Haardt and Kalliojarvi, and duplication of the claims elements from Haardt and Kalliojarvi is based upon hindsight. Accordingly, it is respectfully submitted that the rejection of Claims 1 and 18, and the claims that depend from these two claims (i.e., claims 2-17 and 19-32), under 35 U.S.C. §103(a) is improper, and the Examiner is respectfully requested to withdraw the rejections under U.S.C. §103(a).

IV. CONCLUSION

Applicant respectfully submits that the above-identified application is in condition for allowance and the Applicant therefore earnestly requests such allowance. Should the Examiner have any questions or wish to discuss the foregoing response, Applicant requests that the Examiner contact the undersigned at (480) 385-5060.

If for some reason Applicant have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

Dated 01/07/05

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